UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/683,130 | 11/21/2001 | Scott E. Trevino | GEMS8081.107 | 1211 |

27061 7590 01/10/2008

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

| EXAMINER | |
|---|---|
| KIM, CHONG R | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2624 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 01/10/2008 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

info@zpspatents.com
rlt@zpspatents.com
klb@zpspatents.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

---

*Ex parte* SCOTT TREVINO,
RANJEETA SINGH, VEENA HALLEPPANAVAR, ROBERT H. HAWORTH,
GRAEME MCKINNON

---

Appeal 2007-2903
Application 09/683,130
Technology Center 2600

---

Decided: January 8, 2008

---

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT and
ROBERT E. NAPPI, *Administrative Patent Judges*.

HAIRSTON, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-31. We have jurisdiction under 35 U.S.C. § 6(b).

## SUMMARY OF DECISION

We AFFIRM.

## INVENTION

Appellants' claimed invention is to a method and an apparatus that hierarchically prioritizes scan parameters of a medical imaging application on a per scan basis (Spec. ¶ [0006]). The scan parameters are prioritized to define a dependence relationship for each scan parameter (Spec. ¶ [0006]). By defining this relationship between the scan parameters, the system allows for notification to the user of an invalid parameter entry (Spec. ¶ [0006]). A graphical user interface facilitates entry and/or modification of scan parameter values along with user notification in case of an invalid parameter entry (Spec. ¶ [0006]).

Claims 1, 9, 12, and 19, reproduced below, are representative of the subject matter on appeal.

> 1. A method of guiding prescription of an medical imaging scan, the method comprising:
> launching an imaging application;
> determining a plurality of scan parameters of the imaging application;
> receiving a scan parameter input;
> comparing the scan parameter input to a reference value;

determining a state of validity of a number of remaining scan parameters;
notifying a user of if any state of validity is out of a predefined range for the scan parameter input before updating the number of remaining scan parameters.

9. A method of prescribing imaging data acquisition of a subject, the method comprising:
(A) receiving a user input to initiate a scan session;
(B) determining a plurality of scan parameters specific to the scan session;
(C) hierarchically prioritizing the plurality of scan parameters for the scan session;
(D) repeat steps (A) and (B) for a new scan session; and
(E) re-prioritizing the plurality of scan parameters for the new scan session.

12. The method of claim 10 wherein a change to one of the set of tertiary scan parameters may affect another of the set of tertiary scan parameters, but not affect any of the set of secondary scan parameters and any of the set of primary scan parameters.

19. A computer readable medium having stored thereon a computer program representing a set of instructions that when executed by a computer causes the computer to:
display a graphical user interface (GUI) configured to assist prescription of a medical imaging session;
display a window on the GUI upon receipt of a selection command, the window configured to display a number of modifiable scan parameters;
receive a command to modify a scan parameter;
modify the scan parameter;
determine at least one effect of modifying the scan parameter on another scan parameter; and
display an indication of the at least one effect on the GUI prior to modification of the another scan parameter.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

| | | |
|---|---|---|
| Gaertner | US 5,680,560 | Oct. 21, 1997 |
| Seybold | US 5,877,758 | Mar. 2, 1999 |
| Wu | US 6,687,527 B1 | Feb. 3, 2004 (filed Aug. 28, 2001) |

The following rejections are before us for review.

1. Claims 9-18 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wu.
2. Claims 1-8 and 19-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu in view of Gaertner.
3. Claims 25-31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu in view of Seybold and further in view of Gaertner.

ANTICIPATION UNDER § 102(e) AND OBVIOUSNESS

Independent claims 9 and dependent claims 10-11, and 13-16 were argued as a group with claim 9 as representative (Br. 4-6). Dependent claim 12 was argued separately (Br. 6-7). Claims 1-8 and 19-24 were argued as a group with independent claims 1 and 19 as representative (Br. 8-16). Further, as Appellants have presented no further arguments as to the additional reference of Seybold used in rejecting claims 25-31, but instead rely on the arguments provided for claims 1 and 19 (Br. 17-20), claims 25-31 will likewise stand or fall with claims 1 and 19.

There are three issues before us. The first issue before us is whether the Examiner erred in rejecting claim 9 under 35 U.S.C. § 102(e) as anticipated by Wu. The issue turns on whether Wu discloses "hierarchically prioritizing the plurality of scan parameters for the scan session."

The second issue before us is whether the Examiner erred in rejecting claim 12 under 35 U.S.C. § 102(e) as anticipated by Wu. This issue turns on whether Wu discloses that a change to one tertiary scan parameter affects another tertiary scan parameter.

The third issue involves the obviousness rejection of claims 1 and 19, and turns on whether Wu discloses notifying a user when any state of validity is out of a predefined range for the scan parameter input before updating the number of remaining scan parameters as claimed by claims 1 and 19.

## FINDINGS OF FACT

The relevant facts include the following:

1. Wu teaches that the selection of a sequence in step 504 retrieves the entire set of values that govern the operation of the MRI apparatus (col. 14, ll. 20-27).
2. Wu teaches that the operator hierarchically prioritizes the scan parameters in: parameters which are fixed such as the field of view (FOV) (col. 19, ll. 6-25), modifiable parameters such as those displayed in Figure 2A which include resolution 104 (col. 9, ll. 7-47), and monitor parameters such as those shown in Figure 2B including imaging time 206 (col. 10, ll. 24-40).
3. The tertiary parameters such as the monitor parameters in Wu may be changed directly even though not preferably or indirectly via the change of the secondary parameters or the selectable parameters (col. 10, ll. 41-47).

4. Wu discloses that tradeoffs are made between the monitor parameters such as signal-to-noise ratio (SNR) 202 and the imaging time 206 (col. 10, ll. 56-59).
5. Wu discloses that user notification of an invalid monitor scan parameter including warning indicators of the particular undesirable region is provided (col. 11, ll. 11-26 and col. 11, l. 53-col. 12, l. 4) at which point the user can either use the "undo" button 144 of Figure 2A to enter a new scan parameter input/selectable parameter (Fig. 2A and col. 15, ll. 39-46) or update the at least one invalid scan parameter/affected monitor parameter as guided by the pointed arrows (Fig. 2B, col. 11, ll. 19-26 and col. 11, l. 53-col. 12, l. 3). Changing of the invalid monitor parameter can be achieved either indirectly by changing the scan parameter input (Fig. 2A) or directly by changing the invalid monitor parameter itself (Fig. 2B and col. 10, ll. 41-47).
6. Wu teaches that when an invalid monitor parameter (e.g. SAR 230) constitutes a significant safety concern, a danger warning is displayed (Fig. 2B, element 260, col. 11, l. 53-col. 12, l. 4).

## PRINCIPLES OF LAW

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. Inc., v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

Analysis of whether a claim is patentable over the prior art under 35 U.S.C.

§ 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

## ANALYSIS

### A. Does Wu disclose "hierarchically prioritizing the plurality of scan parameters for the scan session?"

Appellants argue that the Examiner's position is erroneous because a selection of a sequence in step 504 of Figure 3 does not determine which parameters are most important (highest priority) and less important and therefore there is no hierarchy of the parameters (Br. 4-5). At best, the selection of a sequence only determines the values for all of the scan parameters (Br. 4-5).

As stated *supra*, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. Inc., v. Union Oil Co. of California*, 814 F.2d at 631. Furthermore, analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the Specification as it would be interpreted by one of ordinary skill in the art. *In re American Academy of Science Tech Center*, 367 F.3d at 1364.

Wu teaches that the selection of a sequence in step 504 retrieves the entire set of values that govern the operation of the MRI apparatus (Finding of Fact 1). Thus, we agree with Appellants that the aforementioned section of the reference does not disclose any hierarchical prioritizing of the plurality of scan parameters. However, this is not determinative of this issue as the reference itself does teach elsewhere the claimed hierarchical prioritizing of the scan parameters. In particular, Wu teaches that the operator hierarchically prioritizes the scan parameters in: parameters which are fixed such as the FOV, modifiable parameters such as those displayed in Figure 2A which include resolution 104, and monitor parameters such as those shown in Figure 2B including imaging time 206 (Finding of Fact 2). This hierarchy of the scan parameters is the same as the one disclosed in the current disclosure which includes the respective: primary parameters including FOV, secondary parameters including resolution and tertiary parameters including timing (Spec. ¶ [0166]).

Thus, we are not persuaded by the Appellants' argument because Wu expressly discloses hierarchically prioritizing the plurality of scan parameters for the scan session under the broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art.

**B. Does Wu teach that a change to one tertiary scan parameter affects another tertiary scan parameter?**

Appellants argue that Examiner erred in rejecting claim 12 because Wu does not teach that a change to one of set of tertiary scan parameters may affect another of the set of tertiary scan parameters (Br. 6-7). The Appellants further assert that

"may" is defined as "to be allowed or permitted to" which thereby means that a change to one tertiary parameter requires the ability to affect another tertiary parameter (Br. 7).

As previously stated, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. Inc., v. Union Oil Co. of California*, 814 F.2d at 631. Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re American Academy of Science Tech Center*, 367 F.3d at 1364.

At the outset we note that claim 12 states nothing about how the change of the tertiary parameters is achieved, thus, the tertiary parameters such as the monitor parameters in Wu may be changed directly even though not preferably or indirectly via the change of the secondary parameters or the selectable parameters (Finding of Fact 3). Wu discloses that tradeoffs are made between the monitor parameters such as SNR 202 and the imaging time 206 (Finding of Fact 4). Therefore, Wu teaches that a change to SNR 202, which is a tertiary scan parameter, has the ability to affect imaging time 206 which is another tertiary scan parameter.

In view of the foregoing, we find the Appellants' argument not persuasive as Wu does teach that a change to one tertiary parameter may or has the ability to

affect another tertiary parameter.

**C. Does Wu teach "notifying a user of if any state of validity is out of a predefined range for the scan parameter input before updating the number of remaining scan parameters" based on the broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art?**

In the obviousness rejection of claims 1 and 19, Appellants argue that the Examiner erred in modifying Wu in view of Gaertner because neither reference nor their combination teaches notification to the user prior to updating of the remaining scan parameters (Br. 8-16).

As previously stated, analysis of whether a claim is patentable over the prior art begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re American Academy of Science Tech Center*, 367 F.3d at 1364.

The pertinent section of the specification relating to user notification of an invalid scan parameter states:

> The present invention provides prescription guidance by notifying the user when the user changes a scan parameter value of those other scan parameters that have been automatically changed, are out of a valid range, and require the user to enter a new value. That is, if the user inputs a scan parameter value that causes another scan parameter value to be changed and the change to the other scan parameter is valid, the scan assistant will notify the user that the other scan parameter value is valid and has therefore been automatically

> changed. However, if the user changes a scan parameter value which causes another scan parameter to be out of the valid range, the scan assistant will notify the user that the other scan parameter is now out of a valid range and is therefore invalid. Further, if the user changes a scan parameter value, the scan assistant is also configured to notify and prompt the user to enter a new scan parameter value for another scan parameter value that is dependent upon the changed parameter value.

Specification [¶165].

Thus, the Specification states that the user is notified of an invalid scan parameter after all of the parameters have been automatically changed at which point the user is prompted to change the invalid scan parameter. Consistent with the specification, and further limiting to independent claim 1, dependent claims 6-8 describe user notification of an invalid scan parameter and prompting the user to enter a different scan parameter or update the at least one invalid scan parameter (claims 6-8 and Spec. ¶ [0166]).[1]

Thus, in determining the scope of the claim under the broadest reasonable construction in light of the Specification, Wu discloses the disputed limitation

[1] We note that the original disclosure does not provide support for the disputed limitation of claim 1: "before updating the number of the remaining scan parameters" and the equivalent amended limitations of claims 19 and 25. The originally filed disclosure only provides support for notification of a user of an invalid scan parameter after all of the parameters have been automatically changed and prompting the user to enter a different scan parameter or update the at least one invalid scan parameter (original claim 1, 6-8 and Spec. ¶ [0166]). The amended limitation of record dated 03/03/2005 which states that the invalid scan parameter is updated before updating the remaining scan parameters is opposite to the specification's disclosure of user notification of an invalid scan parameter after all of the parameters are automatically changed. This error should be corrected if the present application is further prosecuted.

since user notification of an invalid monitor scan parameter including warning indicators of the particular undesirable region is provided at which point the user can either use the "undo" button 144 of Figure 2A to enter a new scan parameter input/selectable parameter or update the at least one invalid scan parameter itself (Findings of Fact 5).

Furthermore, when the invalid monitor parameter constitutes a significant safety concern a danger warning is displayed (Findings of Fact 6). We find that the skilled artisan would recognize that the user will change this invalid parameter first either directly or indirectly before updating the remaining scan parameters as recommended by the arrows of Fig. 2B in order to alleviate any safety concerns. Thus, Wu teaches changing the affected invalid scan parameter before further updating the remaining scan parameters based on the arrow recommendations of Fig. 2B.

Thus, we find the Examiner's use of the secondary reference of Gaertner cumulative as the disputed claim limitation is disclosed by Wu based on the broadest reasonable construction in light of the specification, as it would be interpreted by one of ordinary skill in the art.

## CONCLUSIONS OF LAW

We conclude that the Appellants have not shown that the Examiner erred in rejecting claims 9-18 under 35 U.S.C. § 102(e) or in rejecting claims 1-8 and 19-31 under 35 U.S.C. § 103(a).

DECISION

The decision of the Examiner to reject claims 1-31 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

eld

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)
136 S WISCONSIN ST
PORT WASHINGTON WI 53074